



UNITED STATES PATENT AND TRADEMARK OFFICE

8
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,343	04/01/2004	Dany Felix Maria Michiels	9292	8286
7590	11/28/2007		EXAMINER	
Thomas L. Moses Legal Department, M-495 PO Box 1926 Spartanburg, SC 29304			CROUSE, BRETT ALAN	
			ART UNIT	PAPER NUMBER
			1794	
			MAIL DATE	DELIVERY MODE
			11/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/815,343	MICHELS, DANY FELIX MARIA
	Examiner	Art Unit
	Brett A. Crouse	1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 04 September 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 2-7 and 9-16 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 2-7, 9-11 and 15 is/are rejected.
- 7) Claim(s) 12-14 and 16 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20070904.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

This office action is in response to the amendment, filed 4 September 2007, which cancels claim 8, and amends claims 2, 9 and 12. Claims 2-7, and 9-16 are pending.

Response to Amendment

The rejection of:

claims 2-7, 9-11, and 15 under 35 U.S.C. 103(a) as being unpatentable over Chikaraishi et al., US 5,705,445, in view of Bernard et al., US 5,411,638, is overcome by the amendment, filed 4 September 2007.

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection as set forth below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-7, 9-11, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikaraishi et al., US 5,705,445 hereinafter known as Chikaraishi, in view of Bernard et al., US

5,411,638 hereinafter known as Bernard, further in view of Rebouillat, US 5,139,873 hereinafter known as Rebouillat, as evidenced by Albrecht et al., Nonwoven Fabrics, page 324.

Chikaraishi teaches:

Column 3, lines 1-50, teach a woven fabric web having a coating layer wherein the coating layer is formed from an aqueous emulsion comprising an organopolysiloxane of formula (I), (a). The coating layer also comprises an alkoxy silane compound, (d). The coating layer can comprise an alkoxy silane compound having at least one epoxy group or amino group, (e).

Column 3, line 54 through column 4, line 26, teach suitable groups useful in the organopolysiloxane of formula (I), (a). Suitable groups include vinyl, epoxy, and methacryl.

Column 6, line 37 through column 7, line 2, provide exemplary alkoxy silane compounds including trimethoxy silane compounds, (d).

Column 7, lines 29-40, provide exemplary compounds of component (e). The passage provides examples in which the epoxy compound is a trimethoxy silane compound.

Column 8, lines 28-36, teach that the material of the fabric is not particularly limited and that aramid fibers in the form of filaments, staple, or combination thereof is preferred.

Column 8, lines 37-49, teach that methods for coating the fabric are not particularly limited. The passage additionally teaches dipping as a coating method.

Chikaraishi does not teach:

Chikaraishi does not teach pre-treatment of the fabric prior to application of the coating with either a plasma or epoxy compound. Chikaraishi however, does teach the use of

epoxy compounds, but the epoxy containing compounds can be incorporated into one or more of the components of the aqueous emulsion.

Bernard teaches:

Column 1, lines 33-39, teach it is the objective of Bernard to provide a method for treating aramid fiber to improve its adhesion rubber.

Column 1, lines 49-58, teach the aramid filament is subject to plasma treatment followed by coating baths.

Column 5, line 66 through column 6, line 13, teach that the first bath is an epoxy resin bath.

Column 6, line 57 through column 7, line 14, teaches that the aramid fiber is preferably poly(paraphenylene terephthalamide). Additionally, the passage teaches the fibers are monofilaments formed into a cord.

Column 7, line 53 through column 8, line 42, tables 3 and 4, teaches that fibers that are treated with plasma exhibit improved tear properties over non-plasma treated fibers.

Column 8, lines 45-59, teach that the gas used for the plasma treatment is not critical and that treatment at atmospheric pressure can be used.

Motivation to combine:

It would have been obvious to one of ordinary skill in the art to use the preferred para-aramid fiber of Bernard coupled with the plasma treatment of Bernard to improve the adhesion of the silicone coating composition of Chikaraishi in order to produce a material to form a more reliable air bag. Additionally, it would have been obvious to select from the preferred groups of Chikaraishi groups such as acryloxy (methacryl), epoxy, vinyl, and amino for the groups of the

Art Unit: 1794

components of the coating in order to improve the coating properties as taught by Chikaraishi.

Also, it would have been obvious to perform the pre-treatment of Bernard to the fabric of Chikaraishi in the order taught by Bernard, (select/provide fabric, plasma treatment, dipping) in order to achieve improved adhesion of the coating of Chikaraishi applied by a dipping step as taught as suitable by Chikaraishi.

The combination of Chikaraishi in view of Bernard does not teach a weft insertion warp knit fabric.

Rebouillat teaches:

Column 6, lines 65-67, teach poly-p-phenylene-terephthalamide as the fiber.

Column 4, lines 7-18, teach a surface treated fiber for rubber reinforcement.

Column 9, lines 56-68, teaches that plasma treatment can be applied before, during, or after treatment with a surface treatment agent via a dipping step.

Column 7, line 62 through column 8, line 13, teach for elastomer reinforcement the surface agents which include silanes, including trialkoxysilanes.

Column 13, lines 27-53, teaches the use of knitting fabrics as reinforcing materials.

It would have been obvious to one of ordinary skill in the art to expect the process of Chikaraishi/Bernard to be suitable for use on knit fabrics as taught by Rebouillat as providing suitable knit as woven fabrics for use in rubber reinforcement.

Albrecht et al. as evidence:

<http://books.google.com/books?id=w3c9DpqdziQC&pg=PA324&lpg=PA324&dq=weft+insertion+warp+knit&source=web&ots=r4cQHlxrgG&sig=MycRJ9OMIOA97bd2u2CAq-GYeYI>

Albrecht teaches various types of weft insertion warp knitting. It would have been at once envisaged by one of ordinary skill in the art to associate weft insertion warp knitting with a knitting operation.

Google Book Search [weft insertion warp knit]

Nonwoven Fabrics By Wilhelm Albrecht, Hilmar Fuchs, Walter Kittemann

Page 324 Full screen

Fig. 6-55 Nonwoven composite produced to the KSB process

offered by KSB nonwoven composites is their initial volumes are maintained, the nonwoven components remain in their pure original condition. Manufacture requires rolling feed from two large batch rolls so the process is as much as continuous. The degree of bonding is influenced via wale density and course density.

The working tools required in addition to the basic stitch-bonding tools are two support rails and a counter retaining element. Due to the kind of process, the knocker-off sinker needs to be designed open to the bottom. The fibre materials used to form the loops need to allow the conversion via small radii.

A Kunit layer-bonded nonwoven shows a layer of loops on both surfaces, the loops being taken from the materials fed in. In the interior of the nonwoven cross-section, the KSB process creates a third layer of loops bonding the two nonwovens used (Fig. 6-55).

Nonwoven composites made to the Kunit layer-bonding process show, due to their voluminosity, good insulation properties and, as a consequence of their structure, excellent rebound, which can even be enhanced by means of thermal treatment.

6.2.2 Warp knitting

Using warp-knitting machines to bond webs/nonwovens, the fibres are the same as in the stitch-bonding process (Maliwatt), tied up in the loops of the warp-knitted systems of threads. However, they do not create any loops. In addition to the fibre webs, further systems of threads can be tied up [85]:

- bonding through warp yarns by means of one or more guide bars
- bonding through warp yarns and weft insertion
- bonding through warp yarns, weft insertion and pillar inlay
- bonding through warp yarns and pillar inlay
- bonding through warp yarns, weft insertion, pillar inlay as well as yarns at angles of +45° and -45° or other angles

Sponsored Links

[Nonwoven Fabric](#) spunbond, spunlace, needlepunch master rolls, perf rolls, sheets [www.oxco.com](#)

[Digital Fabric Printing](#) Custom Fabric Printing No Minimum Yardage. [www.dpi-sf.com](#)

[WILEY-VCH](#)
Published by Wiley-VCH
Pages displayed by permission

[Basic HTML mode](#)

Allowable Subject Matter

Claims 12-14 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach or suggest the recited composite article in which the polyaramid textile is a weft insertion warp knit fabric and respective method of making in which the polyaramid textile is epoxy activated followed by plasma activation prior to the dipping step.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brett A. Crouse whose telephone number is 571-272-6494. The examiner can normally be reached Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terell H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BAC/ 15 November 2007



TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700